



## Plant based products: Use and development as repellents against mosquitoes: A review

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### Abstract:

Global warming and deforestation have resulted in the relocation of many living creatures including insects during the recent years. This has affected the population balance of disease vectors including mosquitoes resulting in outbreaks. Traditionally, mankind has been using plants as means of protection from the mosquitoes which are considered to be environment friendly unlike the synthetic chemicals that cause major risk to human health and the ecosystem. Researchers explored mainly, essential oils and traditional plants using different testing methodologies to find out repellent molecules effective against mosquitoes which is the main focus of this review. Among the promising plant species, *Eucalyptus* spp., *Ocimum* spp. and *Cymbopogon* spp. are the most cited. Data of repellency produced from the bioassay systems is difficult to quantify because of different parameters, testing system and standards of material used against mosquitoes. Mainly, the human forearm based bioassays have been used with different sizes of treatment area in the laboratory and the results have not been tested in the field conditions for residual activity. In addition, effectiveness of essential oils and their protection time can be increased by using vanillin as synergist and formulation techniques like microencapsulation and nanoemulsion. There is a need to develop an alternate in vitro bioassay system that can address the problems of uniformity of the results.

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### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes

#### Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

#### Geographic Location:

resource focuses on specific location

Global or Unspecified

#### Health Impact:



specification of health effect or disease related to climate change exposure

Infectious Disease

**Infectious Disease:** Vectorborne Disease

**Vectorborne Disease:** Mosquito-borne Disease

**Mosquito-borne Disease:** General Mosquito-borne Disease

**Resource Type:** 

format or standard characteristic of resource

Review

**Timescale:** 

time period studied

Time Scale Unspecified